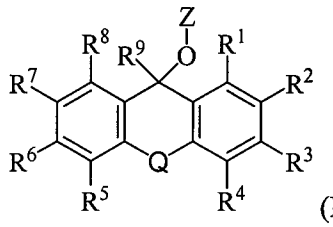
AMENDMENTS TO CLAIMS

This listing of the claims will replace all prior versions and listing of claims in the application.

Listing of claims

1. (Currently amended) A compound of formula I:



(I),

wherein:

R^1, R^3, R^4, R^5, R^6 and R^8 are each, independently, H or alkyl or substituted alkyl;

R^2 and R^7 are each, independently, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, hydroxyl, [[halo]] chloro, floro, iodo, cyano, azido, nitro, $-C(=O)O-R^{10}$, $-O-C(=O)-R^{10}$, $-C(=O)N(R^{10})R^{11}$, $-N(R^{10})C(=O)R^{11}$, $-N(R^{10})R^{11}$, $-O-R^{10}$, or $-S-R^{10}$;

or two or more groups R^1-R^8, together with the ring carbons to which they are attached, combine to form a cyclic moiety selected from substituted or unsubstituted alicyclic, substituted or unsubstituted heterocyclic, substituted or unsubstituted aromatic, or substituted or unsubstituted heteroaromatic;

R^9 is alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl or substituted aryl;

R^{10} is H or alkyl;

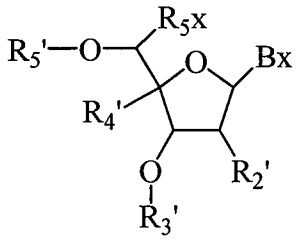
R^{11} is H or alkyl;

Z is a deoxy residue of a protected compound selected from a nucleoside, a nucleotide, a solid support-bound nucleotide, a nucleotide phosphoroamidite, an oligonucleotide, an oligonucleotide blockmer, or a solid support-bound oligonucleotide; and

Q is O, S, NR^{10}, $N(C=O)R^{10}$.

2. (Original) A compound of claim 1, wherein R^1, R^3, R^4, R^5, R^6 and R^8 are each H.
3. (Original) A compound of claim 2, wherein R^2 and R^7 are selected from alkyl or substituted alkyl.
4. (Original) A compound of claim 1, wherein any one of the protected compounds comprises at least one modified sugar, a 2'-substituent, or a conjugate group.

5. (Original) A compound of claim 4, wherein the 2'-substituent is selected from fluoro, alkoxy, substituted alkoxy, or OPR, wherein PR is a 2'-protecting group.
6. (Original) A compound of claim 5, wherein the 2'-substituent is selected from fluoro, OCH_3, $OCH_2CH_2OCH_3$, or $OCH_2CH_2ON(CH_3)_2$.
7. (Original) A compound of claim 5, wherein the 2'-substitutent is OPR.
8. (Original) A compound of claim 7, wherein PR is selected from CPEP, ACE, TOM, TBDMS, or Fpmp.
9. (Original) A compound of claim 4, wherein the modified sugar is a locked nucleic acid, or a 4'-thio nucleic acid.
10. (Original) A compound of claim 4, wherein the conjugate group comprises a lipophilic moiety.
11. (Original) A compound of claim 10, wherein the lipophilic moiety is selected from a cholesterol moiety or a polyethylene glycol moiety.
12. (Currently amended) A compound of formula (II):



(II)

wherein

Bx is an optionally protected heterocyclic base moiety;

one of R_3' or R_5' is Px, wherein Px is a hydroxyl protecting group of formula I, according to claim 1, and the other is selected from:

–P(Pg)(Pn), where Pg is a phosphorus protecting group and Pn is –N(RN1)(RN2), wherein each of RN1 and RN2 is independently selected from hydrogen, substituted or unsubstituted aliphatic, substituted or unsubstituted alicyclic, substituted or unsubstituted aromatic, or substituted or unsubstituted heteroaromatic, or RN1 and RN2 are taken together with the nitrogen atom to which they are attached to form a cyclic moiety selected from substituted or unsubstituted heterocyclic;

–L-ss, where L is a linking moiety and ss is a solid support;

an H-phosphonate moiety; or

a nucleic acid moiety selected from a nucleoside, a nucleotide, a solid support-bound nucleotide, a nucleotide phosphoroamidite, an oligonucleotide, an oligonucleotide blockmer, or a solid support-bound oligonucleotide;

R_2' is independently selected from OH, alkoxy, substituted alkoxy, halogen, or OPR, where PR is a 2'-protecting group, or a nucleic acid moiety selected from a nucleoside, a nucleotide, a solid support-bound nucleotide, a nucleotide phosphoroamidite, an oligonucleotide, an oligonucleotide blockmer, or a solid support-bound oligonucleotide;

R_4' is H or R_4' and R_2' are taken together to be $-(CH_2)_n$-Y-, where n is 1 or 2 and Y is selected from -O-, -S-, or -N(RN3)-, wherein RN3 is selected from H or substituted or unsubstituted aliphatic; and

[[R_5x]] R_5' is selected from H or substituted or unsubstituted alkyl.

13. (Currently amended) A compound of claim 12, ~~selected~~ wherein R_5' is Px and R_3' is –P(Pg)(Pn).

14. (Original) A compound of claim 13, wherein Pg is $-O(CH_2)_2CN$ and Pn is $-N(CH(CH_3)_2)_2$.

15. (Original) A compound of claim 12, wherein R_2' is OPR.

16. (Original) A compound of claim 15, wherein PR is selected from Px, CPEP, ACE, TOM, TBDMS, or Fpmp.

17. (Original) A compound of claim 13, wherein Pn is $-N(CH_2CH_3)_2$.

18. (Original) A compound of claim 17, wherein R_2' is OPR.

19. (Original) A compound of claim 18, wherein PR is CPEP.

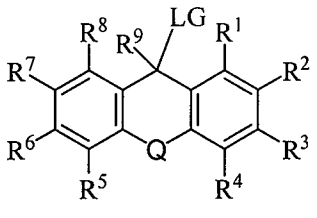
20. (Original) A compound of claim 12, wherein R_5' is Px and R_3' is a nucleic acid moiety selected from a nucleoside, a nucleotide, a solid support-bound nucleotide, a nucleotide phosphoroamidite, an oligonucleotide, an oligonucleotide blockmer, or a solid support-bound oligonucleotide.

21. (Original) A compound of claim 12, wherein R_3' is Px and R_5' is a nucleic acid moiety selected from a nucleoside, a nucleotide, a solid support-bound nucleotide, a nucleotide phosphoroamidite, an oligonucleotide, an oligonucleotide blockmer, or a solid support-bound oligonucleotide.

22. (Original) A compound of claims 20 or 21, wherein any one of said nucleic acid moieties comprises a modified sugar, a 2'substituent, or a conjugate group.

23. (Currently amended) A method of synthesizing compounds of formula I, according to claim 1, comprising the steps of:

providing a free hydroxyl of a compound selected from a nucleoside, a nucleotide, a nucleotide phosphoramidite, an oligonucleotide, an oligonucleotide blockmer or a solid support-bound oligonucleotide; and

reacting said compound with a protecting group of formula (III):  (III),

wherein

R^1, R^3, R^4, R^5, R^6 and R^8 are each, independently, H or alkyl or substituted alkyl;

R^2 and R^7 are each, independently, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, hydroxyl, [[halo]] chloro, floro, iodo, cyano, azido, nitro, $-C(=O)O-R^{10}$, $-O-C(=O)-R^{10}$, $-C(=O)N(R^{10})R^{11}$, $-N(R^{10})C(=O)R^{11}$, $-N(R^{10})R^{11}$, $-O-R^{10}$, or $-S-R^{10}$;

or two or more groups R^1-R^8, together with the ring carbons to which they are bonded, combine to form a cyclic moiety selected from substituted or unsubstituted alicyclic, substituted or unsubstituted heterocyclic, substituted or unsubstituted aromatic, or substituted or unsubstituted heteroaromatic;

R^9 is alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl or substituted aryl;

R^{10} is H or alkyl;

R^{11} is H or alkyl;

LG is a leaving group; and

Q is O, S, NR^{10}, or $N(C=O)R^{10}$.

24. (Original) The method of claim 23, wherein the leaving group is chloro.

25. (Original) The method of claim 23, wherein R^1, R^3, R^4, R^5, R^6 and R^8 are each H.